

Date: Thursday, 5/3/2007 11:38:22 AM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : NO STEP LABEL
 Job Number : 32198
 Estimate Number : 10160
 P.O. Number : *N/A* Part Number : D2137
 This Issue : 5/3/2007 S.O. No. : *N/A* Drawing Number : D2137 REV 93.29.06
 Prsht Rev. : NC Project Number : N/A
 First Issue : *N/A* Type : PURCHASED PARTS Drawing Revision : 93.29.06
 Previous Run : 31463 Material : *N/A*
 Written By : Due Date : 5/10/2007 Qty: 20 Um: Each
 Checked & Approved By : *4/27/05.03*
 Comment : Est: B 02.02.01 Added step 3 and Inspection level 21
 SM

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 PG PURCHASING



Comment: PURCHASING

Issue P/O *3698*

Make per Dwg 2137

C 207/05/04 (20)

2.0 D2137P Decal - No Step



Comment: Qty.: 1.0000 Each(s)/Unit Total : 20.0000 Each(s)
 DECAL- NO STEP

3.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect for Transit Damage

Ensure Material Release Note is attached

4/15/08 (22)

4.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

2705-10 (22)

5.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: *5413**4/15/08 (22)*

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: AD Date: 07/05/14
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 5/3/2007 11:38:22 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: NO STEP LABEL

Job Number: 32198

Part Number: D2137

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC21

FINAL INSPECTION/W/O RELEASE



(22)

Comment: FINAL INSPECTION/W/O RELEASE

15/07/05/14

Job Completion



U 07.05.14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

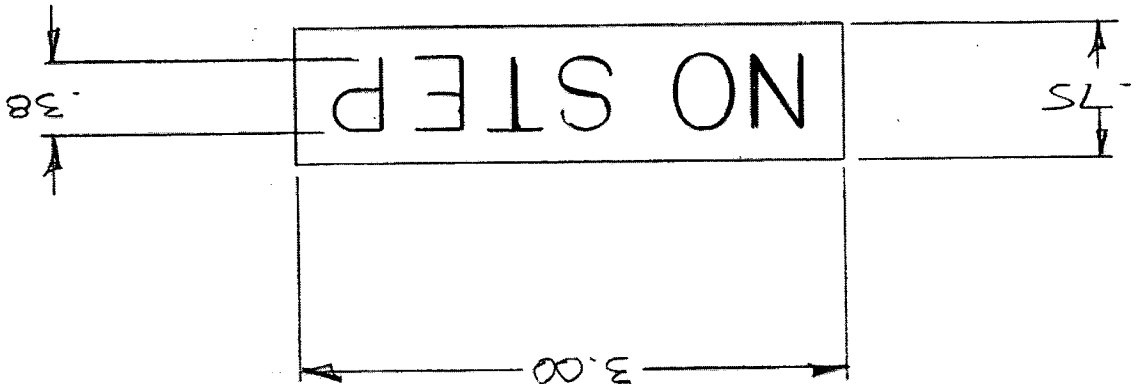
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

CE 12 D



MATERIAL: 3M BOLTESTER
NATURAL (SILVER &
WHITE) ON BLACK.
.003 THICK



NO. 32198
WORK ORDER
WITHOUT NOTICE
SUBJECT TO AMENDMENT
UNCONTROLLED COPY
RETURN TO
ENGINEERING
3M 7 MIL MASKING FILM #8522CP
SILVER OR WHITE ON BLACK
400-09-05
400-09-05

REVISION		DRAWN		APPROVED		DESCRIPTION OF CHANGE	
THIS DRAWING IS PRIVATE AND CONFIDENTIAL AND IS LOANED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE PERMISSION OF DART AERO.							
REQUIREMENTS - UNLESS OTHERWISE SPECIFIED							
TOLERANCES - DEC 3, 2000 FRACTIONS 1 ANGLES 2 DECIMALS 3 THIRDS 4 FOURTHS 5 FIFTHS 6 SIXTHS 7 SEVENTHS 8 EIGHTHS 9 TENTHS 10 HUNDRETHS 11 THOUSANDTHS 12 HUNDREDTHS 13 MILLIONTHS 14 ONE HUNDREDTHS 15 ONE THOUSANDTHS 16 ONE HUNDREDTHS 17 ONE THOUSANDTHS 18 ONE HUNDREDTHS 19 ONE THOUSANDTHS 20 ONE HUNDREDTHS 21 ONE THOUSANDTHS 22 ONE HUNDREDTHS 23 ONE THOUSANDTHS 24 ONE HUNDREDTHS 25 ONE THOUSANDTHS 26 ONE HUNDREDTHS 27 ONE THOUSANDTHS 28 ONE HUNDREDTHS 29 ONE THOUSANDTHS 30 ONE HUNDREDTHS 31 ONE THOUSANDTHS 32 ONE HUNDREDTHS 33 ONE THOUSANDTHS 34 ONE HUNDREDTHS 35 ONE THOUSANDTHS 36 ONE HUNDREDTHS 37 ONE THOUSANDTHS 38 ONE HUNDREDTHS 39 ONE THOUSANDTHS 40 ONE HUNDREDTHS 41 ONE THOUSANDTHS 42 ONE THOUSANDTHS 43 ONE THOUSANDTHS 44 ONE THOUSANDTHS 45 ONE THOUSANDTHS 46 ONE THOUSANDTHS 47 ONE THOUSANDTHS 48 ONE THOUSANDTHS 49 ONE THOUSANDTHS 50 ONE THOUSANDTHS 51 ONE THOUSANDTHS 52 ONE THOUSANDTHS 53 ONE THOUSANDTHS 54 ONE THOUSANDTHS 55 ONE THOUSANDTHS 56 ONE THOUSANDTHS 57 ONE THOUSANDTHS 58 ONE THOUSANDTHS 59 ONE THOUSANDTHS 60 ONE THOUSANDTHS 61 ONE THOUSANDTHS 62 ONE THOUSANDTHS 63 ONE THOUSANDTHS 64 ONE THOUSANDTHS 65 ONE THOUSANDTHS 66 ONE THOUSANDTHS 67 ONE THOUSANDTHS 68 ONE THOUSANDTHS 69 ONE THOUSANDTHS 70 ONE THOUSANDTHS 71 ONE THOUSANDTHS 72 ONE THOUSANDTHS 73 ONE THOUSANDTHS 74 ONE THOUSANDTHS 75 ONE THOUSANDTHS 76 ONE THOUSANDTHS 77 ONE THOUSANDTHS 78 ONE THOUSANDTHS 79 ONE THOUSANDTHS 80 ONE THOUSANDTHS 81 ONE THOUSANDTHS 82 ONE THOUSANDTHS 83 ONE THOUSANDTHS 84 ONE THOUSANDTHS 85 ONE THOUSANDTHS 86 ONE THOUSANDTHS 87 ONE THOUSANDTHS 88 ONE THOUSANDTHS 89 ONE THOUSANDTHS 90 ONE THOUSANDTHS 91 ONE THOUSANDTHS 92 ONE THOUSANDTHS 93 ONE THOUSANDTHS 94 ONE THOUSANDTHS 95 ONE THOUSANDTHS 96 ONE THOUSANDTHS 97 ONE THOUSANDTHS 98 ONE THOUSANDTHS 99 ONE THOUSANDTHS 100 ONE THOUSANDTHS							
PART NO.		ITEM		DESCRIPTION		MATERIAL	
SPEC. VENDOR		DART AERO ACCESSORIES INC.		VANCOUVER		CANADA	
DATE		DRAWN		CHECKED		TITLE	
12/29		J. J. J.		92		DECAL - NO STEP	
CONTRACT NO.		BASIC CODE		BASIC CODES		DWG. NO.	
				B-MS20-10AD		D 2137	
RIVET CODE SHALL BE PER NAS 823		BASIC CODE		BASIC CODES		SCALE	
						1:1	
						SHEET 1 OF 1	
						REPORT ALL DISCREPANCIES - DO NOT SCALE	



Scotchcal™ Opaque Imaging Media 8522

Description

This media is specially formulated to dry quickly after printing. Production of outdoor weatherable and long-term indoor durable graphics is now easier than ever. Its changeable adhesive allows easy removal for up to one year.

Advantages

- Optimized for use with selected Epson Stylus Pro printers and Epson Archival inks.
- Optimized for use with selected HP DesignJet Printers and HP DesignJet Ink System UV or HP83UV Color Ink System
- For making opaque, laminated graphics that are outdoor weatherable and long-term indoor durable
- Media:
 - For opaque (reflective) graphics
 - Changeable, easy to remove from warranted substrates up to 1 year later
 - Dries quickly after printing so the overlaminate can be applied almost immediately
 - Low slippage paper liner for superior tiling
- Overlaminates:
 - Provide additional UV (ultraviolet) and physical protection for making weatherable finished graphics
 - Available in luster and matte gloss
 - Adhesive allows for heat-assisted or cold-temperature lamination

Applications and Uses

3M™ Scotchcal™ Changeable Opaque Imaging Media 8522 is intended only for ink jet printing and for use with the listed Compatible Products and Equipment and the following applications. Any other application is NOT warranted by 3M or covered by the worldwide 3M™ MCS™ Warranty unless 3M gives its prior written approval for the application.

- First surface images (the image is on top of the film) for opaque posters and signs, including:
 - Graphics for vans, personal vehicles, trucks and buses
 - Novelty posters
 - Retail and point-of-purchase displays
 - Information graphics such as maps and directories
 - Entertainment promotions in museums, zoos, parks, theatres, sports venues
 - Education and presentation graphics

Product Bulletin 8522

Release F. Effective January 2003
Black bar in margin indicates a change

- Legal and courtroom exhibits
- For flat or simple curved surfaces, with or without rivets, used in vertical ($\pm 10^\circ$) applications

Limitations of End Uses

The following uses and applications are specifically NOT warranted.

- Fleet applications in areas that use salt for winter road maintenance
- Application to non-warranted substrates, including wall-board
- Applications subjected to gasoline vapors or spills
- Application to corrugated or highly irregular surfaces or sharply raised areas
- Graphics applied to stainless steel, including stainless steel vehicles
- On flat surfaces with rivets, tenting of 4 to 10 mm around rivets may be expected; rivets may be cut around to eliminate tenting.

Note: Standard ink jet technology is water based. Water-based chemistry is susceptible to the extremes of heat and humidity. This is a factor in most product constructions on the market. Read the Fabrication, Shelf Life and Storage sections in this bulletin. Staying in the middle of these ranges always provides optimum performance.

Compatible Products and Equipment

Thermal Ink Jet Printing Systems

- Epson Stylus Pro 9500, Stylus Pro 10000 printer
 - Epson Archival Inks
- Epson Stylus Pro 10600 printer
 - Epson Archival Inks
- HP DesignJet Printers 2000 and 3000 series
 - HP DesignJet Ink System UV (pigment-based ink)
- HP DesignJet Printers 5000 series
 - HP83UV Color Ink System

Overlaminates (required)

- 3M™ Luster Overlaminate 8519 (semi-gloss)
- 3M™ Matte Overlaminate 8520

Note: For the full product names of the 3M products listed on this page, please see page 1.

Warranted Substrates

Media 8522 is warranted for use on the following rigid substrates.

Some substrates may "out-gas", resulting in tiny bubbles throughout the surface of the graphic. For maximum performance, be sure the substrate you select is properly cleaned and prepared as recommended by the manufacturer. See Instruction Bulletin 5.1 for additional information.

- Alodine (anodized aluminum)
- Automotive panels (automotive painted steel)
- Fruehauf (painted aluminum)
- FRP (fiberglass reinforced plywood)
- Glass
- Imron® (polyurethane-painted metal panel)
- Acrylic
- Sintra™ board

Test and Approve Non-warranted Substrates Before Use

Media 8522 is not warranted for any substrate other than those listed above. If you want to use it for other substrates, 3M recommends that you test and approve the media for both adhesion and removal characteristics.

Characteristics

Characteristic	Description
Media	7 mil, white, opaque graphic film
Liner	Low-slippage, lay flat paper
Adhesive	Changeable, pressure sensitive
Thickness (media and adhesive)	7.5 to 8 mil (nominal)
Application substrates	See Warranted Substrates, above
Application surfaces	Flat or simple curved surfaces, with or without rivets, used in vertical ($\pm 10^\circ$) applications (no corrugations)
Application temperature range	28° to 110°F (-2° to 43°C) (air and surface)
Roll sizes	36" x 45 feet (914 mm x 13.5 m) 54" x 45 feet (1372 mm x 13.5 m)

How to Become a 3M Ink Jet Registered Fabricator

Only 3M Thermal Ink Jet Registered Fabricators are eligible to offer 3M MCS warranted graphics. In order to become certified, a fabricator must complete the requirements as specified in the 3M Ink Jet Graphics Registered Fabricator Reference Manual located on the 3M website at www.scotchprint.com.

Effective Performance Life

To obtain the warranty given below, the graphics must be made according to 3M's recommendations which are detailed in the Warranty and Limited Remedies on page 3. Also see the section, Removability.

Warranted Durability

Media 8522 with Overlaminates 8519 or 8520	Epson Printers		HP Printers	
	Outdoor	Indoor	Outdoor	Indoor
Applied to Warranted Substrates	2 years	5 years	3 years	5 years

Removability

Imaging media 8522 is removable from warranted substrates for 1 year without the aid of chemical strippers or accessories. Refer to Instruction Bulletin 4.23 for additional information.

Fabrication

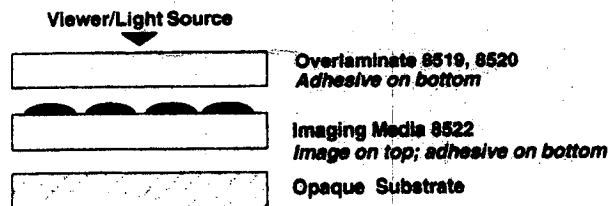
Graphics must be made according to 3M's recommendations which are detailed in the Warranty and Limited Remedies on page 3.

See Instruction Bulletin 4.23 for detailed fabrication, printing and mounting information.

Graphic Construction Options

Opaque (Reflective) Graphics

Opaque graphics made with imaging media 8522 require an overlaminate and an opaque substrate.



Note: For the full product names of the 3M products listed on this page, please see page 1.

Shelf Life and Storage

- 3M™ Scotchcal™ Changeable Opaque Imaging Media 8522 has a shelf life of one year.
- Storage conditions (new and partially used rolls). For optimum performance, use the middle of these ranges:
 - Original packaging, including plastic wrap
 - Relative humidity of 20% to 80%
 - Temperature of 33° to 104°F (0° to 40°C)
 - Away from direct sunlight
- Do not stack unprotected rolls or lay sharp or heavy objects on them.

Health and Safety

Caution

When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information.

To obtain MSDS sheets for 3M products:

- By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations.
- Electronically, visit us at <http://www.3M.com/msds>.
- By mail, or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturers' instructions for safe operation.

Warranty and Limited Remedies

3M™ MCS™ Warranty for Graphics Produced on HP DesignJet Printers and Epson Stylus Pro Printers

The following is made in lieu of all other express or implied warranties, including any implied warranty of *merchantability* or fitness for a particular purpose: We warrant graphics produced by a 3M Ink Jet Registered Fabricator made with imaging media 8522, printed on an approved HP thermal ink jet printer according to HP's recommendations or Epson Stylus Pro printer according to Epson's recommendations, overlaminated with 8519 or 8520, and applied to a Warranted Substrate according to 3M's recommendations. These

graphics are covered against failure caused by ultraviolet light, temperature extremes, pollution, and other elements.

If a graphic fails to perform in accordance with 3M product specifications within this time frame, 3M will replace the materials at no charge. **These remedies are exclusive. In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor charges.**

3M Related Literature

Listed below is related 3M technical literature that may be of interest. You may view and print these Bulletins from our Web site at www.scotchprint.com, or order them via our Fax-on-Demand (FOD) system. Call one of these phone numbers to order the desired bulletins, and specify the FOD document number provided in the chart.

United States or Canada: 1-800-364-0768
International: 1-651-732-6506

Subject	Bulletin No.	FOD No.
Product Bulletins		
3M™ Scotchcal™ Overlamine 8519 and 8520	8519/8520	4524
Instruction Bulletins		
Making thermal ink jet graphics	4.23	6523
Application, substrate selection, preparation and substrate-specific application techniques	5.1	7001
Warranties		
Worldwide 3M™ MCS™ Warranty Packet (includes all Commercial Graphics MCS Warranties)		9503
Worldwide 3M™ MCS™ Warranty Overview-Folder		9504

3M, Scotchcal and MCS are trademarks of 3M.
Epson and Stylus Pro are trademarks of Epson.
HP and DesignJet are trademarks of Hewlett Packard.
Sintra is a trademark of Swiss Aluminum Ltd.
Imron is a registered trademark of DuPont in the United States

Bulletin Change Summary

The Epson Stylus Pro Printers 9500, 10000 10600, and Epson Archival Inks have been added to this bulletin. Additional changes resulting from this addition are marked with black bars in the margin.



Commercial Graphics Division

3M Center, Building 220-6W-06
PO Box 33220
St. Paul, MN 55133-3220 USA
General Info. 1-800-374-6772
Technical Info. 1-800-328-3908
Fax 1-651-736-4233

Fax-on-Demand 1-800-364-0768 US/Canada or 1-651-732-6506 International
Fax-on-Demand document: 4506
www.scotchprint.com

3M Canada

P.O. Box 5757
London, Ontario
Canada N6A 4T1
1-800-265-1840
Fax 519-452-6245

3M México, S.A. de C.V.

Av. Santa Fe No. 55
Col. Santa Fe, Del. Alvaro Obregón
México, D.F. 01210
52-55-52-70-04-00
Fax 52-55-52-70-22-77

3M Puerto Rico, Inc.

Puerto Rico Industrial Park
P.O. Box 100
Carolina, PR 00986-0100
787-620-3000
Fax 787-750-3035

©3M 2003. All rights reserved.

Product Bulletin 8522 - 3